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ICC-ES Report

ESR-3375

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Reissued 08/2016
This report is subject to renewal 08/2018.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 21 00—THERMAL INSULATION

REPORT HOLDER:

SES FOAM

**4008 LOUETTA ROAD, #538
SPRING, TEXAS 77388-4405**

EVALUATION SUBJECT:

**SUCRASEAL™ 0.5 AND SES FOAM 0.5 LB SPRAY:
SPRAY-APPLIED POLYURETHANE FOAM PLASTIC INSULATION**



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ICC-ES Evaluation Report

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A Subsidiary of the International Code Council®
**DIVISION: 07 00 00—THERMAL AND MOISTURE
PROTECTION**
Section: 07 21 00—Thermal Insulation
REPORT HOLDER:
SES FOAM

 4008 LOUETTA ROAD, #538
 SPRING, TEXAS 77388-4405
 (713) 239-0252
www.sesfoam.com
EVALUATION SUBJECT:
**SUCRASEAL™ 0.5 AND SES FOAM 0.5 LB SPRAY:
SPRAY-APPLIED POLYURETHANE FOAM PLASTIC
INSULATION**
1.0 EVALUATION SCOPE
1.1 Compliance with the following codes:

- 2012 and 2009 *International Building Code*® (IBC)
- 2012 and 2009 *International Residential Code*® (IRC)
- 2012 and 2009 *International Energy Conservation Code*® (IECC)
- Other Codes (see Section 8.0)

Properties evaluated:

- Surface-burning characteristics
- Physical properties
- Thermal resistance (*R*-values)
- Air permeability
- Exterior walls in Types I-IV construction

1.2 Evaluation to the following green standard:

- 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2008)

Attributes verified:

- See Section 3.1

2.0 USES

Sucraseal™ 0.5 spray polyurethane foam plastic insulation is used as a nonstructural thermal insulating material in buildings of Type I, II, III, IV and V (IBC) construction, and in dwellings built under the IRC. The insulation is for use in wall cavities and floor/ceiling assemblies, and in attics and

crawl spaces when installed as described in Section 4.4. Under the IRC, the insulation may be used as air-impermeable insulation when installed as described in Section 3.4. SES Foam 0.5 lb Spray is identical to Sucraseal™ 0.5. Wherever Sucraseal™ 0.5 is mentioned, the same property applies to SES Foam 0.5 lb Spray.

3.0 DESCRIPTION
3.1 General:

Sucraseal™ 0.5 spray foam insulation is a two-component, open cell, one-to-one-by-volume spray-applied polyurethane foam system with a nominal density of 0.5 pcf (8.0 kg/m³). The insulation's liquid components are supplied in nominally 55-gallon drums, labeled as "A" component or "B" component. The insulation components have a shelf life of six months when stored in unopened containers at temperatures between 70°F (21°C) and 90°F (32°C).

The attributes of the insulation have been verified as conforming to the provisions of ICC 700-2008 Section 703.2.1.1.1(c) as an air impermeable insulation. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.2 Surface-burning Characteristics:

At a maximum thickness of 4 inches (102 mm) and a nominal density of 0.5 pcf, the insulation has a flame-spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84. Thicknesses for wall cavities and ceiling cavities are not limited when the insulation is covered with a minimum 1/2-inch-thick (12.7 mm) gypsum board installed in accordance with the applicable code.

3.3 Thermal Resistance (*R*-values):

The insulation has thermal resistance (*R*-values) at a mean temperature of 75°F (24°C) as shown in Table 1.

3.4 Air Permeability:

The insulation, at a minimum thickness of 3 inches (76 mm), is considered air-impermeable in accordance with IRC Section R202, based on testing in accordance with ASTM E283.

3.5 DC 315 Fireproof Paint:

DC 315 Fireproof Paint is manufactured by International Fireproof Technology, Inc., and is a water-based coating supplied in 5-gallon (19 L) pails and 55-gallon (208 L)

drums and has a shelf life of six months when stored in a factory-sealed container at temperatures between 50°F (10°C) and 90°F (32°C).

3.6 FireShell® F10E:

FireShell® F10E is manufactured by TPR², and is a water-based coating supplied in 5-gallon (19 L) pails and 55-gallon (208L) drums and has a shelf life of one year when stored in a factory-sealed container at temperatures above 45°F (7°C).

4.0 INSTALLATION

4.1 General:

Sucraseal™ 0.5 spray insulation must be installed in accordance with the manufacturer's published installation instructions and this report. A copy of the manufacturer's published installation instructions must be available at all times on the jobsite during installation.

4.2 Application:

The insulation is spray-applied at the jobsite using a volumetric positive displacement pump as identified in the Sucraseal™ 0.5 spray application manual. The insulation components must be stored at temperatures between 70°F (21°C) and 90°F (32°C) for several days before application. The insulation must not be used in areas that have maximum in-service temperatures greater than 180°F (82°C). The insulation must not be used in electrical outlet or junction boxes or in contact with water (e.g., rain, condensation, ice, snow) or soil. The substrate must be free of moisture, frost or ice, loose scales, rust, oil, grease or other surface contaminants. The insulation can be installed in one pass to the maximum thickness. The spray-applied foam insulation must be protected from weather during and after installation.

4.3 Thermal Barrier:

4.3.1 Application with a Prescriptive Thermal Barrier: Sucraseal™ 0.5 spray insulation must be separated from the interior of the building by an approved thermal barrier of 1/2-inch-thick (12.7 mm) gypsum wallboard or an equivalent 15-minute thermal barrier complying with, and installed in accordance with, IBC Section 2603.4 or IRC Section R316.4, as applicable, except when the installation is in accordance with Section 4.3.2. Within an attic or crawl space, installation must be in accordance with Section 4.4.

4.3.2 Application without a Prescriptive Thermal Barrier: The prescriptive 15-minute thermal barrier may be omitted when installation is in accordance with this section. The insulation and coating may be spray-applied to the interior facing of walls and the underside of roof sheathing or roof rafters, and in crawl spaces, and may be left exposed as an interior finish without a prescribed 15-minute thermal barrier or prescribed ignition barrier when the installation is in accordance with either Sections 4.3.2.1 or 4.3.2.2.

4.3.2.1 Application with DC 315 Fireproof Paint: The thickness of the foam plastic applied to the underside of roof sheathing and to vertical wall surfaces must not exceed 11 1/2 inches (292 mm). The foam plastic must be covered on all surfaces with DC 315 Fireproof Paint at a minimum thickness of 18.0 mils (0.47 mm) wet film thickness [12 mils (0.30 mm) dry film thickness] with a minimum application rate of 1.12 gal/100 ft². The coating must be applied over the Sucraseal™ 0.5 insulation in accordance with the coating manufacturer's published instructions and this report. Surfaces to be coated must be dry, clean and free of dirt, loose debris and other substances that could interfere with adhesion of the

coating. The coating is applied in one or more coats with brush, roller or airless spray equipment.

4.3.2.2 Application with FireShell® F10E: The thickness of the foam plastic applied to the underside of roof sheathing and to vertical wall surfaces must not exceed 11 1/2 inches (292 mm). The foam plastic must be covered on all surfaces with FireShell® F10E at a minimum thickness of 20.0 mils (0.51 mm) wet film thickness [14 mils (0.36 mm) dry film thickness] with a minimum application rate of 1.25 gal/100 ft². The coating must be applied over the Sucraseal™ 0.5 insulation in accordance with the coating manufacturer's published instructions and this report. Surfaces to be coated must be dry, clean and free of dirt, loose debris and other substances that could interfere with adhesion of the coating. The coating is applied in one or more coats with brush, roller or airless spray equipment.

4.4 Attics and Crawl Spaces:

4.4.1 Application with a Prescriptive Ignition Barrier: When Sucraseal™ 0.5 spray is installed within attics and crawl spaces, where entry is made only for service of utilities, an ignition barrier must be installed in accordance with IBC Section 2603.4.1.6 or IRC Section R316.5.3 or R316.5.4, as applicable, except when the installation is in accordance with Section 4.4.2 or Section 4.4.3. The ignition barrier must be consistent with the requirements for the type of construction required by the applicable code, and must be installed in a manner so that the foam plastic insulation is not exposed. Sucraseal™ 0.5 spray insulation at a minimum thickness of 3 inches (76 mm) may be installed in unvented attics in accordance with 2012 IRC Section R806.5 (2009 IRC Section R806.4), as applicable.

4.4.2 Application without a Prescriptive Ignition Barrier: Where the spray-applied insulation is installed in accordance with this section or Section 4.4.3, the following conditions apply:

- a) Entry to the attic or crawl space is to service utilities, and no storage is permitted.
- b) There are no interconnected attic or crawl space areas.
- c) Air in the attic or crawl space is not circulated to other parts of the building.
- d) Attic ventilation is provided when required by IBC Section 1203.2 or IRC Section R806, except when air-impermeable insulation is permitted in unvented attics in accordance with 2012 IRC Section R806.5 or 2009 IRC Section R806.4. Under-floor (crawl space) ventilation is provided when required by IBC Section 1203.3 or IRC Section R408.1, as applicable.
- e) Combustion air is provided in accordance with *International Mechanical Code*® Section 701.

In attics, the insulation may be spray-applied to the underside of roof sheathing or roof rafters, and/or vertical surfaces, and in crawl spaces the insulation may be spray-applied to the underside of floors and/or vertical surfaces as described in this section. The thickness of the foam plastic applied to the underside of the top of the space must not exceed 12 inches (305 mm). The thickness of the foam plastic applied to vertical surfaces must not exceed 11 1/2 inches (292 mm). The foam plastic may be installed without a covering or coating. The insulation may be installed in unvented attics in accordance with 2012 IRC Section R806.5 (2009 IRC Section R806.4). The ignition

barrier in accordance with IBC Section 2603.4.1.6 or IRC Section R316.5.3 may be omitted.

4.4.3 Use on Attic Floors: Sucraseal™ 0.5 spray insulation may be installed exposed at a maximum thickness of 1 1/2 inches (292 mm) between joists in attic floors. The ignition barrier in accordance with IBC Section 2603.4.1.6 or IRC Section R316.5.3 may be omitted. The insulation must be separated from the interior of the building by an approved thermal barrier.

4.5 Exterior Walls of Type I, II, III and IV Construction:

4.5.1 General: When used on walls of Type I, II, III and IV exterior wall construction, the Sucraseal™ 0.5 spray-applied foam insulation must comply with Section 2603.5 of the IBC and this section. The potential heat of Sucraseal™ 0.5 spray-applied foam insulation is 466 Btu/ft² (5.26 MJ/m²) per inch of thickness when tested in accordance with NFPA 259.

4.5.2 Specific Wall Assemblies: Wall assemblies must be as described in Table 2.

5.0 CONDITIONS OF USE

The Sucraseal™ 0.5 spray polyurethane foam plastic insulation described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The insulation must be installed in accordance with the manufacturer's published installation instructions, this evaluation report and the applicable code. If there are any conflicts between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 The insulation must be separated from the interior of the building by an approved 15-minute thermal barrier, as described in Section 4.3.1, except when the installation is in accordance with Section 4.3.2. Installation in an attic or crawl space must be as described in Section 4.4.
- 5.3 The insulation must not exceed the thicknesses noted in Sections 3.2, 4.3, and 4.4.
- 5.4 The insulation must be protected from exposure to the weather during and after application.
- 5.5 The insulation must be applied by contractors certified by SES Foam.
- 5.6 Use of the insulation in areas where the probability of termite infestation is "very heavy" must be in accordance with 2012 IBC Section 2603.9 (2009 IBC Section 2603.8) or IRC Section R318.4, as applicable.
- 5.7 Jobsite certification and labeling of the insulation must comply with IRC Sections N1101.4 and N1101.4.1 and IECC Sections R303.1.1 and 303.1.1.1, as applicable.
- 5.8 When use is on exterior wall of buildings of Type I, II, III or IV construction, construction must be as described in Section 4.5 and Table 2.
- 5.9 A vapor retarder must be installed in accordance with the requirements of the applicable code.
- 5.10 Sucraseal™ 0.5 spray polyurethane foam plastic insulation is produced in St. Louis, Missouri, under a quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377), dated November 2012 (editorially corrected April 2013), including reports of tests in accordance with Appendix X of AC377.
- 6.2 Reports of room corner fire-testing in accordance with NFPA 286.
- 6.3 Report of air permeance testing in accordance with ASTM E283.
- 6.4 Report of potential heat testing in accordance with NFPA 259.
- 6.5 Report of fire propagation testing in accordance with NFPA 285.
- 6.6 Engineering evaluation extending NFPA 285 testing to various exterior wall constructions.

7.0 IDENTIFICATION

Components of the Sucraseal™ 0.5 spray polyurethane foam plastic insulation are identified with the manufacturer's name (SES Foam) and address; the date of manufacture or the lot number; the product trade name (Sucraseal™ 0.5); the mixing instructions; the density; the flame-spread and smoke-developed indices; and the evaluation report number (ESR-3375).

8.0 OTHER CODES

In addition to the codes referenced in Section 1.0, the products in the report were evaluated for compliance with the requirements of the following codes:

- 2006 *International Building Code*®
- 2006 *International Residential Code*®
- 2006 *International Energy Conservation Code*®

The products comply with the above mentioned codes as described in Sections 2.0 through 7.0 of this report, with revisions as noted below:

- **Application with and without a Prescriptive Thermal Barrier:** See Section 4.3, except the approved thermal barrier must be installed in accordance with Section R314.4 of the 2006 IRC.
- **Application with a Prescriptive Ignition Barrier:** See Section 4.4.1, except an ignition barrier must be installed in accordance with Section R314.5.3 or R314.5.4 of the 2006 IRC.
- **Application without a Prescriptive Ignition Barrier:** See Section 4.4.2, except that combustion air is provided in accordance with Sections 701 and 703 of the 2006 IECC.
- **Protection against Termites:** See Section 5.6, except use of the insulation in areas where the probability of termite infestation if "very heavy" must be in accordance with Section R320.5 of the 2006 IRC.
- **Jobsite Certification and Labeling:** See Section 5.7, except jobsite certification and labeling must comply with Sections 102.1.1 and 102.1.1.1, as applicable, of the 2006 IECC.

TABLE 1—THERMAL RESISTANCE (R-VALUES^{1,2})

THICKNESS (inches)	R-VALUE (°F·ft ² ·h/Btu)
1	4.0
2	7.6
3	11
3.5	13
4	15
5	19
6	22
7	26
8	30
9	33
10	37
11	41
12	44

For SI: 1 inch = 25.4 mm, 1°F·ft²·h/Btu = 0.176 110K·m²/W.

¹R-values are calculated based on tested K values at 1- and 3.5-inch thicknesses.

²R-values greater than 10 are rounded to the nearest whole number.

TABLE 2—NFPA 285 COMPLYING EXTERIOR WALL ASSEMBLIES

WALL COMPONENT	MATERIALS
Base wall system – Use either 1, 2, or 3	1 – Concrete wall 2 – Concrete Masonry wall 3 – 1 layer of 5/8-inch thick Type X gypsum wallboard installed on the interior side of minimum 3-5/8 inch deep minimum 20 gauge thick steel studs spaced a maximum of 24-inch on center. Lateral bracing installed minimum every 4 ft. vertically or as required. Wall stud cavities shall be filled at each floor line with minimum 4 lb/ft ³ mineral-fiber insulation friction fit between steel wall studs.
Resilient Channel – For use with Base Wall System 3 above – Use either 1 or 2	1 – None 2 – Double leg “hat” shaped steel resilient channel installed perpendicular to the wall studs (interior side only) and spaced a maximum of 24-inches on center between steel studs and Type X gypsum wallboard. Entire perimeter of window opening to be framed with resilient channel.
Perimeter Fire Barrier System	Perimeter fire barrier system complying with Section 715.4 of the 2012 IBC shall be installed to fill the void between the edge of the concrete floor slab and the interior surface of the exterior wall assembly.
Wall Stud Cavity Insulation	Full wall stud cavity depth or less of SucraSeal™ 0.5 spray-applied foam plastic insulation applied using exterior gypsum sheathing as the substrate and covering the width of the cavity and the inside of the steel wall stud framing flange.
Exterior sheathing – For Base Wall System 3 above	5/8-inch thick Type X exterior type gypsum sheathing complying with ASTM C1177.
Exterior Wall Covering – Use either 1, 2, or 3 (see Note 1 below)	1 – Any non-combustible exterior wall covering material 2 – Any non-combustible exterior wall covering system with a combustible WRB that has successfully been tested in accordance with NFPA 285. 3 – Metal Composite Material (MCM) Mitsubishi Plastic Composites America, Inc., Alpolic/fr wall panels (see ICC-ES ESR-2653) or Alcoa Architectural Products Reynobond FR 6-mm panels (see ICC-ES ESR-3435) where there is no exterior insulation in the cavity behind the panels.
Flashing of window, door and other exterior wall penetrations.	As an option, flash around window, door and other exterior penetrations with limited amounts of maximum 12-inch wide acrylic, asphalt or butyl-based flashing tape or liquid applied membrane material.

For SI: 1 inch = 25.4 mm; 1 pcf = 16.0 kg/m³.

Note 3: Exterior wall coverings shall be installed in accordance with the manufacturer's installation requirements and must comply with the applicable provisions of IBC Chapter 14 and IRC Chapter 7.

ICC-ES Evaluation Report**ESR-3375 FBC Supplement**

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**Section: 07 21 00—Thermal Insulation****REPORT HOLDER:****SES FOAM**

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SPRING, TEXAS 77388-4405

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www.sesfoam.com**EVALUATION SUBJECT:****SUCRASEAL™ 0.5 AND SES FOAM 0.5 LB SPRAY: SPRAY-APPLIED POLYURETHANE FOAM PLASTIC INSULATION****1.0 REPORT PURPOSE AND SCOPE****Purpose:**

The purpose of this evaluation report supplement is to indicate that SucraSeal 0.5 spray polyurethane foam plastic insulation, recognized in ICC-ES master evaluation report ESR-3375, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2014 *Florida Building Code—Building*
- 2014 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The SucraSeal 0.5 spray polyurethane foam plastic insulation (also known as SES Foam 0.5 lb Spray), described in Sections 2.0 through 7.0 of the master evaluation report ESR-3375, complies with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design and installation are in accordance with the 2012 *International Building Code*® (IBC) and 2012 *International Residential Code*® (IRC) provisions noted in the master report under the following condition:

Installation must meet the requirements of Sections 1403.8 and 2603.9 of the *Florida Building Code—Building* and Sections R318.7 and R318.8 of the *Florida Building Code—Residential*, as applicable.

Use of Sucraseal 0.5/SES Foam 0.5 lb spray-applied polyurethane foam plastic insulation has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential*.

For products falling under Florida Rule 9N-3, verification that the report holder's quality-assurance program is audited by a quality-assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the master report, reissued August 2016.

ICC-ES Evaluation Report

ESR-3375 Seal and Insulate with
ENERGY STAR[®] Supplement

Reissued August 2016

This report is subject to renewal August 2018.

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Section: 07 21 00—Thermal Insulation

REPORT HOLDER:

SES FOAM
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www.sesfoam.com

EVALUATION SUBJECT:

SUCRASEAL[™] 0.5 AND SES FOAM 0.5 LB SPRAY: SPRAY-APPLIED POLYURETHANE FOAM PLASTIC
INSULATION

1.0 EVALUATION SCOPE

Conformance to the following:

Seal and Insulate with ENERGY STAR[®] Program—*Definitions and Testing Requirements for Residential Insulation, Version 1.0*

Properties evaluated:

- Thermal resistance
- Surface-burning characteristics

2.0 PURPOSE OF THIS SUPPLEMENT

This supplement is issued to certify that the insulation products described in Sections 2.0 through 8.0 of the master report ESR-3375 have been reviewed for compliance with the requirements of the Seal and Insulate with ENERGY STAR[®] Program, as set forth in the document *Definitions and Testing Requirements for Residential Insulation, Version 1.0*. The insulation product covered by this supplement is defined as “Spray or Pour Foam Insulation.”

The requirements for testing laboratory qualification and product sampling, as well as the specific material and test standards and editions used in this evaluation, are as set forth in the applicable documentation noted in Section 6.0 of the master evaluation report.

3.0 DEFINITIONS

The following definitions are from *Definitions and Testing Requirements for Residential Insulation, Version 1.0*, and are applicable to the subject of this report.

3.1 General Definitions:

Insulation: Any material mainly used to slow down heat flow. It may be mineral or organic, fibrous, cellular, or reflective (aluminum foil). It may be in rigid, semi-rigid, flexible, or loose-fill form.

3.2 Insulation Product Definitions:

Spray or Pour Foam Insulation: A thermal insulating material that is sprayed or poured (as a gel or foamy liquid) into place, and expands or sets into a cellular foam and cures at the point of installation through a chemical reaction. Foamed materials include, but are not limited to polyurethane, polyisocyanurate, phenolic, and cementitious insulation.

3.3 Insulation Performance Definitions:

R-value: The inverse of the time rate of heat flow through a body from one of its bounding surfaces to the other surface for a unit temperature difference between the two surfaces, under steady state conditions, per unit area. For the purposes of the

Seal and Insulate with ENERGY STAR® program, Imperial units will only be accepted [(h-ft²·°F)/Btu].

Smoke-Development Index: The characteristic of a material to emit smoke when exposed to flame or fire compared to red oak and inorganic cement.

Flame-Spread Index: The characteristic of a material to resist the spreading of flames when exposed to flame or fire compared to red oak and inorganic cement.

3.4 Thermal Resistance:

The insulation has the thermal resistance *R*-values as noted in Table 1 of ESR-3375, based upon testing.

3.5 Installation:

3.5.1 General: The installation of the insulation must be in accordance with the requirements set forth in Sections 4.0 and 5.0 (as applicable) of ESR-3375. The insulation is manufactured on-site by spray polyurethane foam applicators meeting the qualification requirements of SES Foam. The following information on personal protective equipment and ventilation requirements is reprinted from the SES Foam published installation instructions:

"F. SAFETY

3. PERSONAL PROTECTIVE EQUIPMENT (PPE):

- a. Skin: Wear gloves, coveralls, apron and boots as necessary to prevent contact of liquid components or partially-cured SPF with skin. When handling liquid components, gloves should be made of nitrile, neoprene, butyl or PVC.
- b. Eyes: Protect eyes while handling liquid components or spraying with safety goggles or safety goggles and a face shield. During spray application, eye protection may be provided by a full-face or hood respirator.
- c. Respiration: Firms engaged in the application of SES Foam systems must have a written respiratory protection program for employees engaged in handling or applying SES Foam materials. Depending on the situation, respiratory protection may include dust masks, air-purifying respirators (APR), powered air-purifying respirators (PAPR), or supplied-air respirators (SAR).
4. VENTILATION: Provide ventilation and other engineering controls to exhaust vapors from work areas and to protect building occupants and other trades."

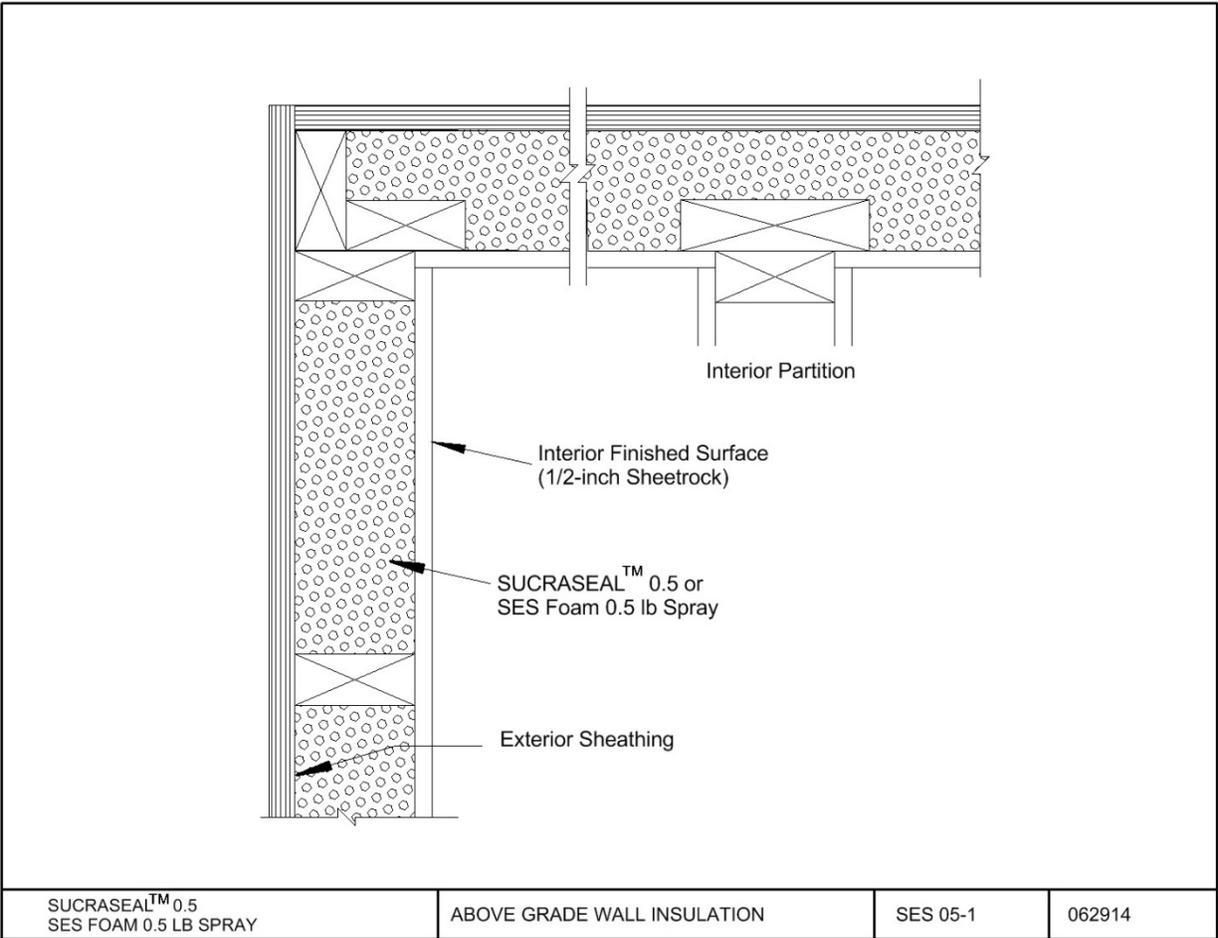
3.5.2 Occupancy Time after Installation: The re-entry or re-occupancy time shall be in accordance with the manufacturer's installation instructions, which state the following:

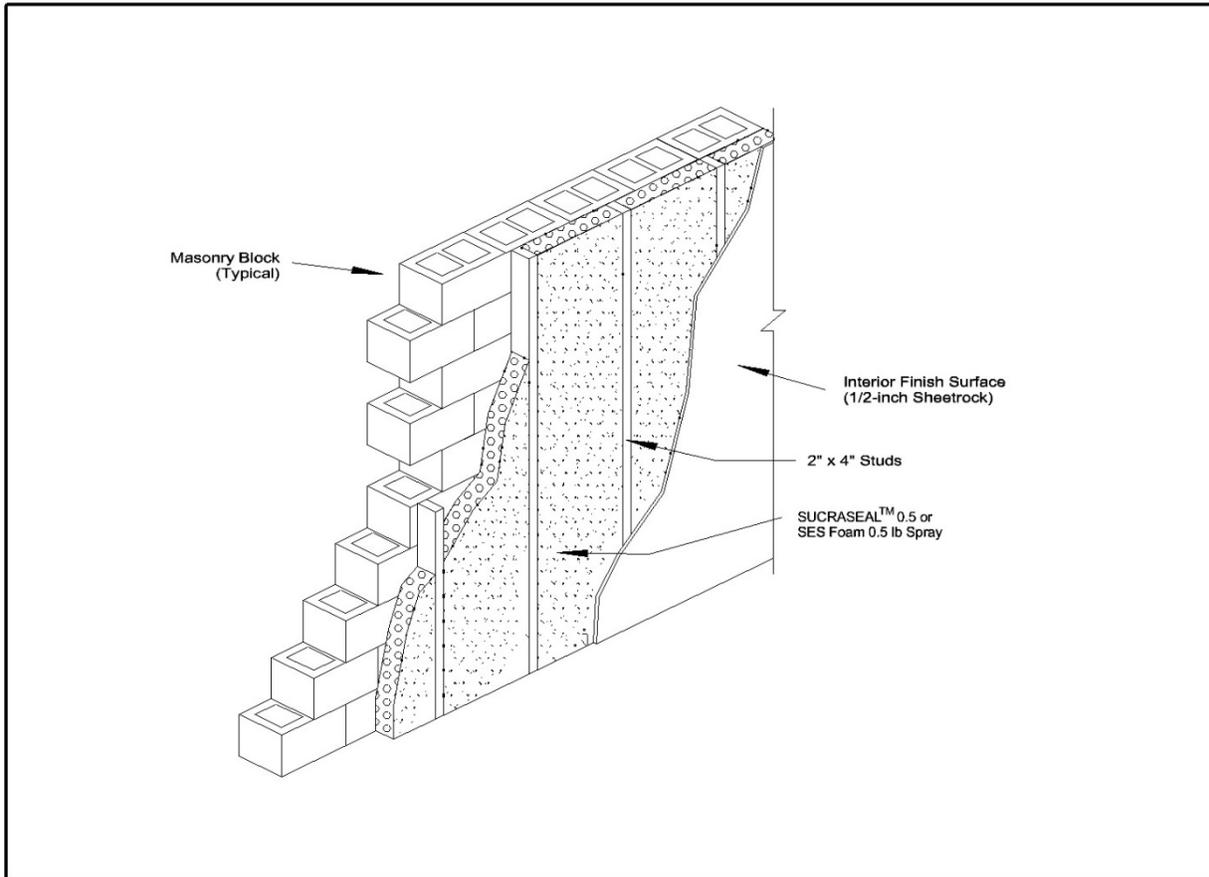
"G. RE-ENTRY

Sucraseal™ 0.5 reacts and cures within seconds of application. Re-entry times will vary depending on factors including ventilation. Typically, ventilation is continued for 24 hours following the conclusion of spray application and re-entry may occur at that time."

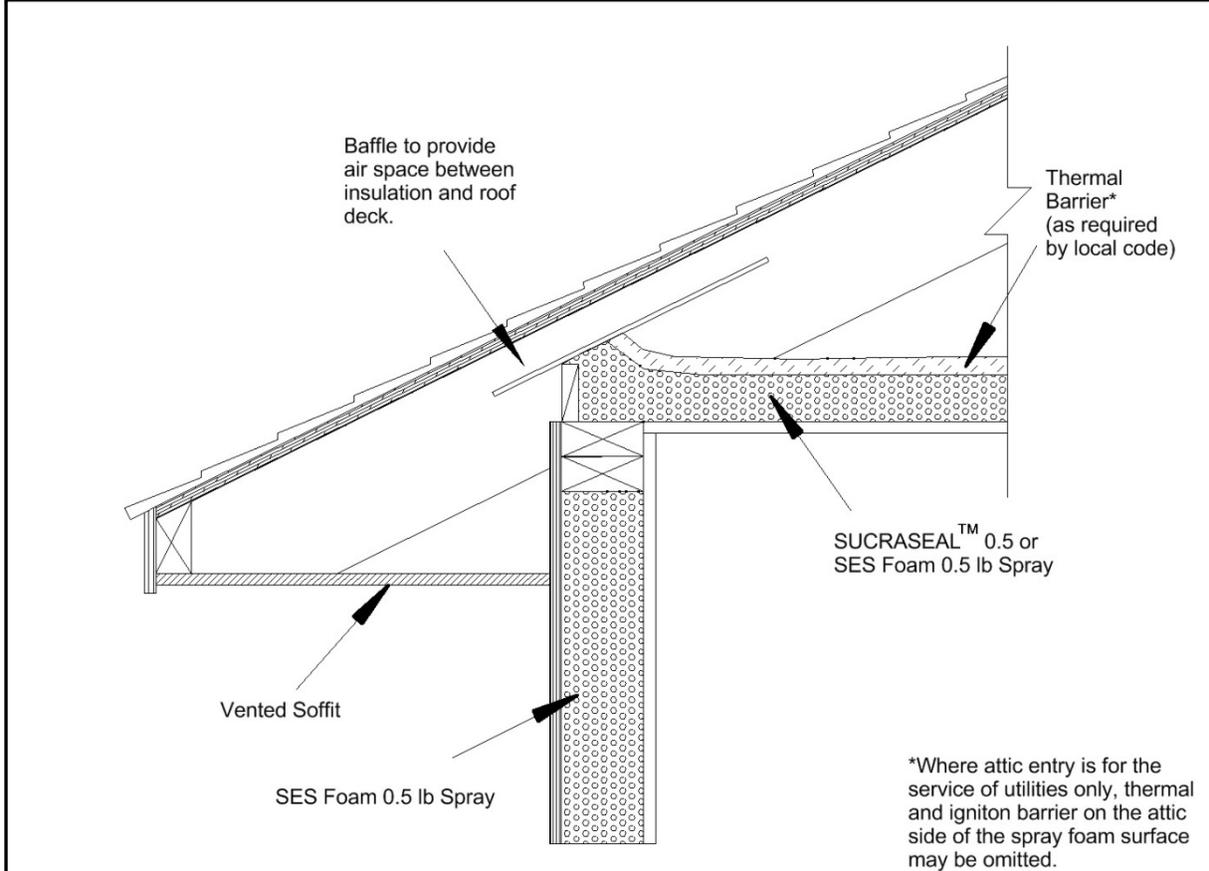
3.5.3 Figures: The figures shown represent general installations of the insulation in the following applications: above-grade wall, below-grade wall, vented and unvented crawl space, unvented cathedral ceiling, and vented and unvented attic. These figures are for illustration purposes and are not to be construed or used as construction documents.

This supplement expires concurrently with the master report, reissued August 2016.

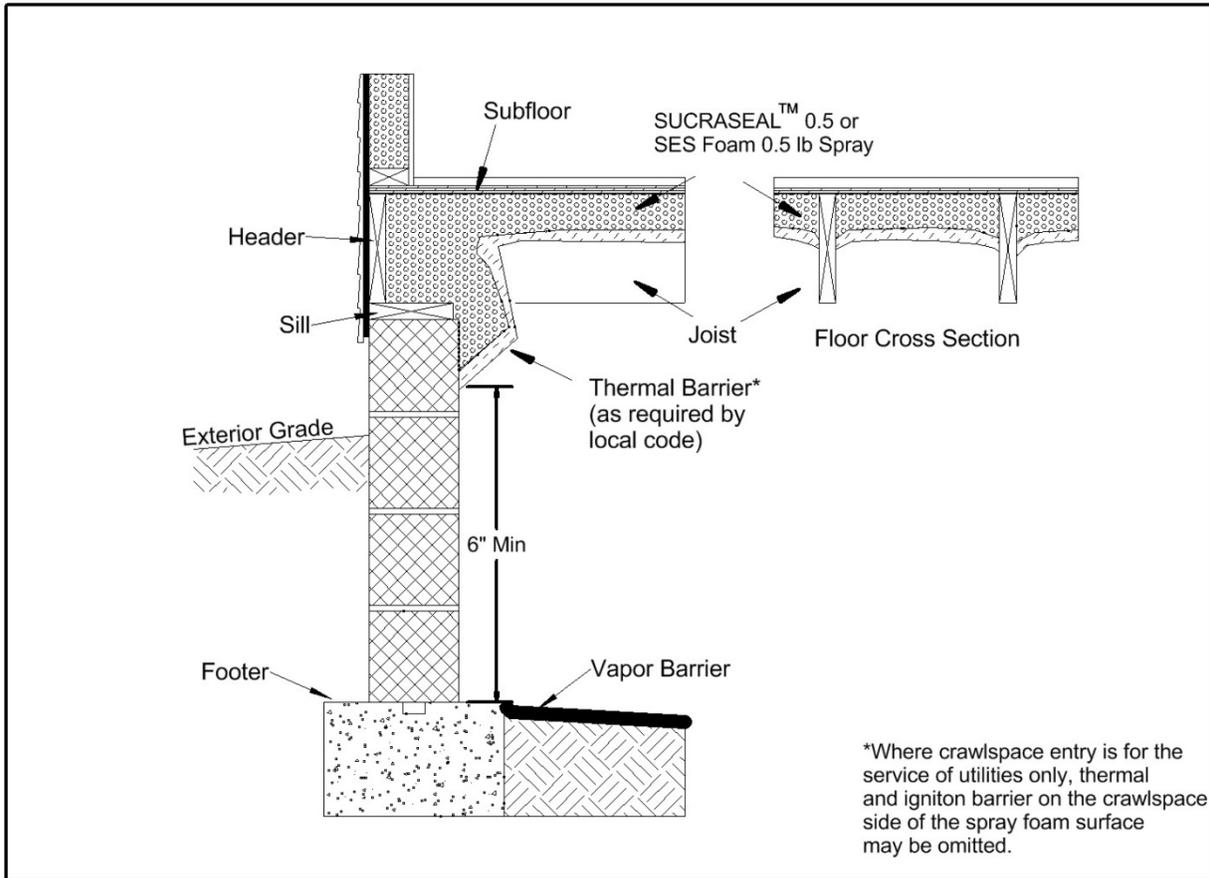




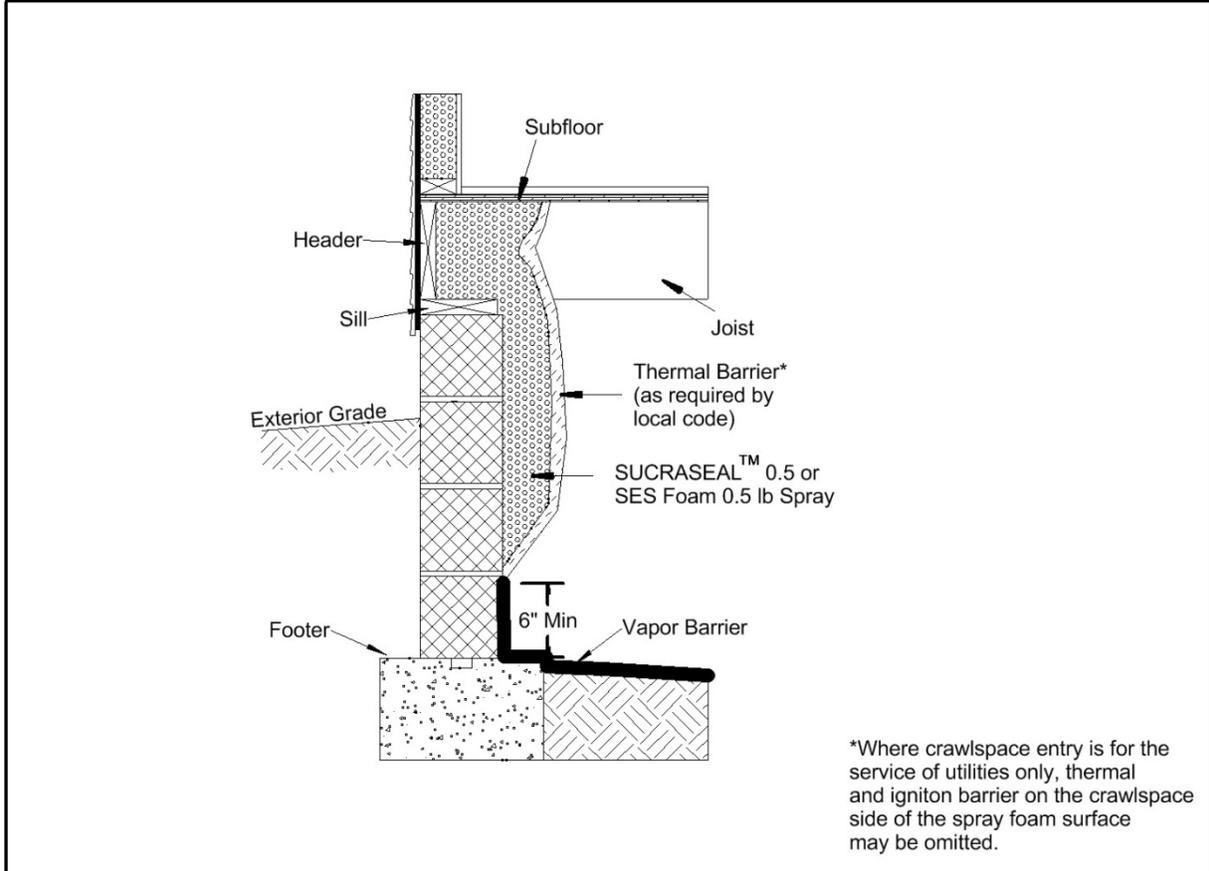
SUCRASEAL™ 0.5 SES FOAM 0.5 LB SPRAY	BELOW GRADE WALL INSULATION (Insulation on Interior Side of Wall)	SES 05-2	062914
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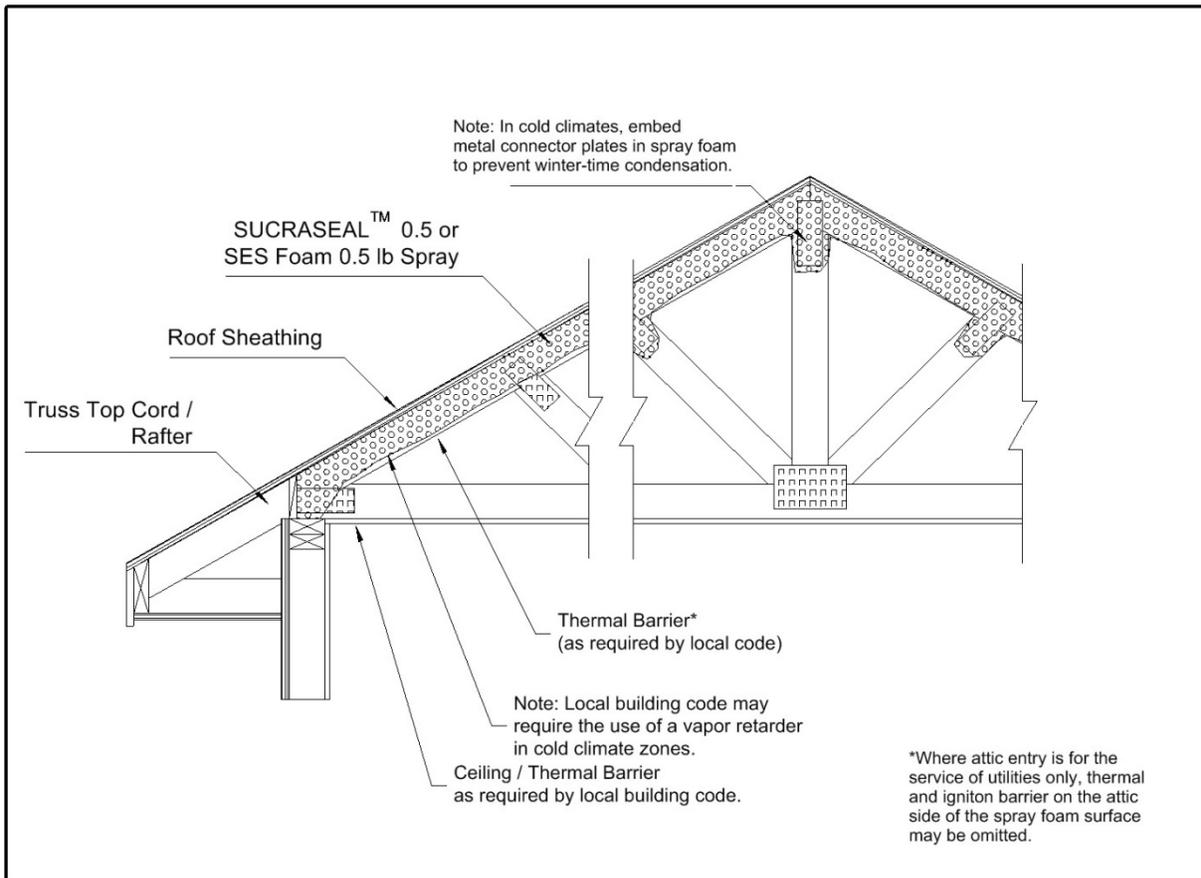
SUCRASEAL™ 0.5 SES FOAM 0.5 LB SPRAY	VENTED ATTIC: FLOOR / SOFFIT	SES 05-3	062914
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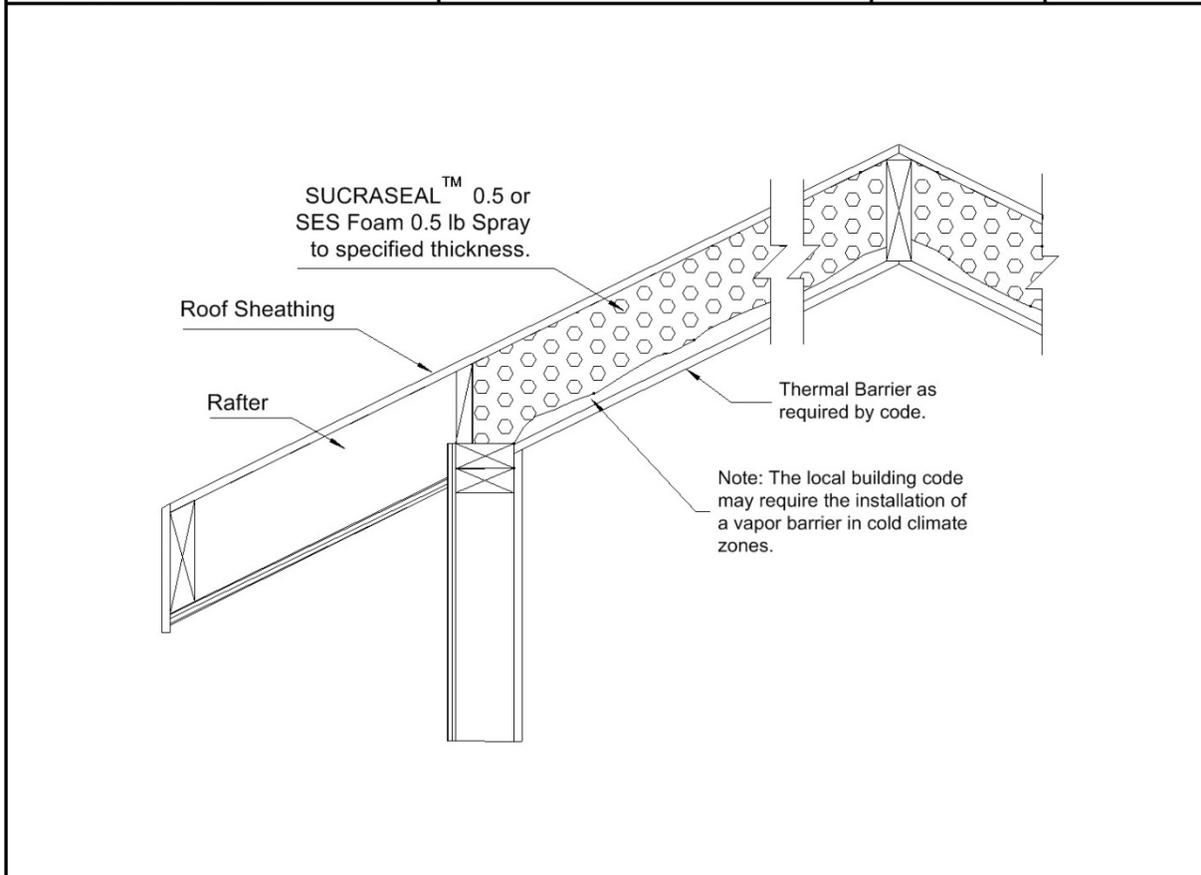
SUCRASEAL™ 0.5 SES FOAM 0.5 LB SPRAY	CRAWLSPACE: VENTED	SES 05-4	062914
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SUCRASEAL™ 0.5 SES FOAM 0.5 LB SPRAY	CRAWLSPACE: UNVENTED	SES 05-5	062914
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SUCRASEAL™ 0.5 SES FOAM 0.5 LB SPRAY	UNVENTED ATTIC / INSULATED ROOF DECK	SES 05-6	062914
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SUCRASEAL™ 0.5 SES FOAM 0.5 LB SPRAY	CATHEDRAL CEILING	SES 05-7	062914
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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 21 00—THERMAL INSULATION

REPORT HOLDER:

SES FOAM

**4008 LOUETTA ROAD, #538
SPRING, TEXAS 77388-4405**

EVALUATION SUBJECT:

SES FOAM 0.5 LB SPRAY POLYURETHANE FOAM PLASTIC INSULATION



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ICC-ES VAR Environmental Report**VAR-1030**

Reissued September 2015

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**DIVISION: 07 00 00—THERMAL AND MOISTURE
PROTECTION****Section: 07 21 00—Thermal Insulation****REPORT HOLDER:****SES FOAM**
4008 LOUETTA ROAD, #538
SPRING, TEXAS 77388-4405
(713) 239-0252
www.sesfoam.com**EVALUATION SUBJECT:****SES FOAM 0.5 lb SPRAY POLYURETHANE FOAM
PLASTIC INSULATION****1.0 EVALUATION SCOPE****Compliance with the following environmental criteria:**

ICC-ES Environmental Criteria for Determination of Bio-based Material Content (EC102), dated March 1, 2012.

Compliance eligibility with the applicable sections of the following codes and standards:

- 2012 *International Green Construction Code*™ (IgCC) (see Table 2 for details)
- ASHRAE Standard 189.1 – 2009 (see Table 3 for details)
- National Green Building Standard (ICC 700-2008) (see Table 4 for details)
- ANSI/GBI 01-2010, Green Building Assessment Protocol for Commercial Buildings (see Table 5 for details)

2.0 USES

SES Foam 0.5 lb Foam S Polyurethane Foam Plastic Insulation is used as nonstructural thermal insulating material in wall cavities, floor/ceiling assemblies, or in attics and crawl spaces. See ICC-ES report [ESR-3375](#) for more information on uses and applications.

3.0 DESCRIPTION

SES Foam 0.5 lb spray-applied polyurethane foam plastic insulation is a two-component, open-cell, water-blown, spray-applied polyurethane foam (SPF) with a nominal density of 0.5 lb/ft³. The foam is sprayed in place using

high-pressure, plural component SPF application equipment. The bio-based content is as set forth in Table 1 of this report.

4.0 CONDITIONS**4.1 Code Compliance:**

See ICC-ES report [ESR-3375](#) for compliance of the SES Foam 0.5 lb Foam S Polyurethane Foam Plastic Insulation with code requirements.

4.2 Green Codes, Standards and Rating Systems Eligibility:

The information presented in Tables 2 through 5 of this report provides a matrix of areas of evaluation and corresponding limitations and/or additional project-specific requirements, and offers benefits to individuals who are assessing eligibility for compliance.

The final interpretation of the specific requirements of the code rests with the Authority Having Jurisdiction.

Compliance for items noted as “Verified Attribute” is subject to any conditions noted in the tables. Decisions on compliance for those items noted as “Eligible for Points” in Tables 2 through 5 rests with the user of this report, and those items are subject to the conditions noted. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report.

Due to the variability of costs and volume, the bio-based content percentage listed in this report is based upon weight (mass). The use of cost or volume as the method for calculation is outside the scope of this report.

5.0 BASIS OF EVALUATION

The information in this report, including the “Verified Attributes,” is based upon submission of documentation demonstrating compliance with the requirements set forth in ICC-ES EC102. (Evaluation applies to IgCC Section 505.2.4, item 3; ASHRAE 189.1 Section 9.4.1.3; ICC 700 Section 606.1; ANSI/GBI-01 Section 10.1.2.2.)

6.0 IDENTIFICATION

Containers of SES Foam 0.5 lb Foam S Polyurethane Foam Plastic Insulation are identified by a label bearing the SES Foam name and address, product name, manufacturing date, manufacturing location and the VAR Environmental Report number (VAR-1030).

TABLE 1—BIO-BASED MATERIAL CONTENT SUMMARY

PRODUCT NAME	% MEAN BIO-BASED CONTENT	METHOD OF DETERMINATION
SES Foam 0.5 lb Spray Polyurethane Foam Plastic Insulation	17% (+/- 3%) ¹	ASTM D6866

Note:

¹Based on precision and bias cited in ASTM D6866.

TABLES 2 THROUGH 5

Section Number	Section Intent	Possible Points	Conditions Of Use To Qualify For Points	Finding
TABLE 2—SUMMARY OF AREA OF ELIGIBILITY WITH THE 2012 INTERNATIONAL GREEN CONSTRUCTION CODE				
505.2.4	Bio-based content	N/A	Bio-based materials shall be those materials that comply with one or more of the following: 3. The requirements of USDA 7CFR Part 2902. Note: USDA 7 CFR Part 2902 §2907.17 sets a minimum bio-based content of 7% (10% +/- 3%). SES Foam 0.5 lb Spray exceeds this minimum.	•
TABLE 3—SUMMARY OF AREA OF ELIGIBILITY WITH THE 2009 ASHRAE STANDARD 189.1				
9.4.1.3	Biobased products	N/A	A minimum of 5% of building materials used, based on cost, shall be biobased products. Biobased products shall comply with the minimum biobased contents of the USDA's Designation of Biobased Items for Federal Procurement [7 CFR Part 2902], contain the "USDA Certified Biobased Product" label, or be composed of solid wood, engineered wood, bamboo, wool, cotton, cork, agricultural fibers, or other biobased materials with at least 50% biobased content. Note: USDA 7 CFR Part 2902 §2907.17 sets a minimum bio-based content of 7% (10% +/- 3%). SES Foam 0.5 lb Spray exceeds this minimum.	•
TABLE 4—SUMMARY OF AREA OF ELIGIBILITY WITH THE 2008 NATIONAL GREEN BUILDING STANDARD (ICC 700)				
606.1	Biobased products	3 8 max	The following biobased products are used: (h) products with the minimum biobased contents of the USDA 7 CFR Part 2902 (i) other biobased materials with a minimum of 50 percent biobased content (by weight or volume) Note: USDA 7 CFR Part 2902 §2907.17 sets a minimum bio-based content of 7% (10% +/- 3%). SES Foam 0.5 lb Spray exceeds this minimum.	•
TABLE 5—SUMMARY OF AREA OF ELIGIBILITY WITH THE ANSI/GBI – 01 (2010) STANDARD				
10.1.2.2	Materials content – Assemblies	1 7 max	Bio-based products accounted for 1% or more of the materials used in the building. Percentage = 100 x A ÷ B, where: A = Total cost or weight of bio-based products B = Total cost or weight of all building products Cost or weight must be used consistently For USDA-designated products, products meeting or exceeding USDA's bio-based content, criteria or qualifying as USDA "BioPreferred" were used. Note: USDA 7 CFR Part 2902 §2907.17 sets a minimum bio-based content of 7% (10% +/- 3%). SES Foam 0.5 lb Spray exceeds this minimum.	•
•	= Verified attribute			